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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,796	11/05/2001	Peng Cheng	042390P8122D	7807

7590 01/28/2003

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EXAMINER

FARAHANI, DANA

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 01/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/992,796

Applicant(s)

CHENG ET AL.

Examiner

Dana Farahani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Mann (U.S. Patent 4,198,670).

Mann discloses in figure 1 a fixed charge plate 14 disposed in a substrate 18; a movable charge plate 12 disposed above the fixed charge plate; and a stiffener 10 affixed to the movable charge plate.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann in view of Takaishi (U.S. Patent 5,973,343).

Regarding claims 1 and 9, Mann discloses in figure 1 a fixed charge plate 14 disposed in a substrate 18; a movable charge plate 12 disposed in the substrate; and a stiffener 10 disposed upon the movable charge plate.

Mann does not disclose the substrate is semiconductor, and the capacitor is in a semiconductor device.

Takaishi discloses in figure 4 capacitors CP in semiconductor device, shown in the figure, and a semiconductor substrate 21. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the variable capacitor in Mann's invention in a semiconductor device, since by changing the capacitance of the variable capacitor the characteristics of the semiconductor device could be controlled; without replacing the capacitor with another one.

Regarding claims 2, 3, 4, and 7, see figure 2 of Mann; and column 1, lines 37-40. Note that plate 12 is movable and plate 14 is fixed, and the area of 14 is larger than 12, as can be seen in the figure

Regarding claims 5, 6, 8, and 19, shown in figure 2 of Mann are solid surface plate 26 and broken surface suspension 28, which has an undulating configuration.

Regarding claims 10 and 11, see Mann, figure 2; and column 1, lines 51-64, wherein it is stated that 24 is an insulator.

Regarding claims 12 and 13, the means for moving movable charge plate 12 in figure 2 of Mann's invention is a fixed actuator plate 14 and a movable actuator plate 12 (see column 2, lines 1-27).

Regarding claims 17, 18, and 21, a fixed charge plate 14 is disposed upon an elevated substrate (upper portion of substrate 18); a fixed actuator plate 28 disposed upon a lower substrate (lower portion of substrate 18) below the fixed charge plate; a

movable charge plate 12 suspended above the fixed charge plate; and a stiffener 10 disposed upon the movable charge plate.

Regarding claim 20, a movable actuator plate 24 of figure 2 is over the fixed actuator plate.

### ***Response to Arguments***

5. Applicant's arguments filed on have been fully considered but they are not persuasive.

Applicants mainly argue that there is no motivation to combine the two references, cited above, since they are not in the same field. However, Takaishi reference is used to show that capacitors are extensively used in semiconductor devices. Therefore, it is within the level of ordinary skill in the art to make a variable capacitor Mann discloses with a semiconductor substrate. Furthermore, some substrates are insulating substrates, and not necessarily made from semiconductor materials.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a semiconductor substrate in Mann's structure, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In this case, one of ordinary skill in the art would have been motivated to include a semiconductor substrate, rather than a plastic one, in

order to be able to use the variable capacitor in a semiconductor device, which uses capacitors, along with some other semiconductor components of the device.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (703)305-1914. The examiner can normally be reached on M-F 8:00AM - 6:00PM.

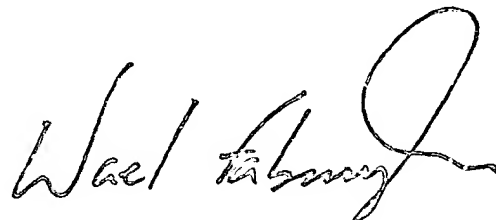
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703)308-4918. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Dana Farahani  
January 23, 2003

A handwritten signature in black ink, appearing to read "Wael Alamy". The signature is fluid and cursive, with a large loop at the end.

SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2800